

Solutions

Marking: **M1** a correct method, **A1** the correct answer.

Each answer shows the steps, then the **result**.

2.1

- the first significant figure is the 4, so keep two digits from there

$$\mathbf{0.0049}$$

2.2

- round each to 1 s.f.: $61.4 \rightarrow 60$ and $3.82 \rightarrow 4$

$$60 \times 4 = \mathbf{240}$$

2.3

- round each to 1 s.f.: $\frac{10 \times 4}{0.5}$

$$= \frac{40}{0.5} = \mathbf{80}$$

3.1

(a)

- round each to 1 s.f.: $\frac{20 \times 4}{0.5}$

$$= \frac{80}{0.5} = \mathbf{160}$$

(b)

- $\frac{18.6 \times 4.32}{0.51} = \frac{80.352}{0.51}$

$$= \mathbf{157.55}$$

- the estimate of 160 is within about 2% of this, so it was reasonable

3.2

(a)

- $8.3 \rightarrow 8$ and $5.7 \rightarrow 6$

$$8 \times 6 = \mathbf{48 \text{ cm}^2}$$

(b)

- each length is correct to 0.05 cm, so the upper bounds are 8.35 cm and 5.75 cm

$$8.35 \times 5.75 = \mathbf{48.0125 \text{ cm}^2}$$